

WHAT IS CLAIMED IS:

1. A nickel-based alloy for producing components which have solidified in single crystal form, comprising:
at least 2.3% by weight rhenium;
tungsten;
aluminium, chromium, and cobalt,
wherein a weight ratio of tungsten to rhenium is 1.1 to 1.6.
2. A nickel-based alloy according to Claim 1, comprising 2.3 to 2.6% by weight rhenium.
3. A nickel-based alloy according to Claim 2, comprising 3.0 to 3.7% by weight tungsten.
4. A nickel-based alloy according to Claim 2, further comprising nickel.
5. A nickel-based alloy according to Claim 2, comprising:
6.2 to 6.8% by weight of aluminum;
7.2 to 7.8% by weight of cobalt;
5.8 to 6.4% by weight of chromium;
0.05 to 0.15% by weight of hafnium;
1.7 to 2.3% by weight of molybdenum;
2.0 to 2.6% by weight of tantalum; and
0.9 to 1.1% by weight of titanium.
6. A gas turbine comprising a component comprising a nickel-based alloy according to Claim 1.
7. A gas turbine according to Claim 6, wherein the component is a blade in a high-speed turbine stage.

8. A process for making a turbine blade comprising casting a nickel-based alloy comprising:

at least 2.3% by weight rhenium;

tungsten;

aluminium, chromium, and cobalt,

wherein a weight ratio of tungsten to rhenium is 1.1 to 1.6.

20070106541001